Final Technical Memorandum

Guidelines for State ITS/CVO Business Plans

prepared for

Federal Highway Administration

prepared by

Cambridge Systematics, Inc.
150 CambridgePark Drive, Suite 4000
Cambridge, Massachusetts 02140

US Deportment
of Transportation
Federal Highway Administration

February 1997

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.

4. Title and Subtitle	5. Report Date
Guidelines for State ITS/CVO Business Plans	
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
Lance R. Grenzeback, Carol G. Colman, John G. Kaliski, and Molly K. Markert	6039.01
9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Cambridge Systematics, Inc.	3B4A
150 Cambridge Park Drive	11. Contract or Grant No.
Suite 4000	DTFH61-92-C-00021
Cambridge, MA 02140	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address	
Federal Highway Administration	
Turner-Fairbank Research Center	Technical Memorandum 1996
6300 Georgetown Pike, HSR-10	14. Sponsoring Agency Code
McLean, VA 22101-2296	

15. Supplementary Notes

Contracting Officer's Technical Representative Michael Freitas, HSR-10

16. Abstract

This technical memorandum was developed as part of the study, "Systems Planning for Automated Commercial Vehicle Licensing and Permitting Systems." The objective of this study was to define the requirements and develop a plan for a national program to apply Intelligent Transportation Systems (ITS) to commercial vehicle operations (CVO). A primary recommendation of this project is that the FHWA should encourage each state to develop an ITS/CVO business plan.

A state ITS/CVO business plan is a "roadmap" to a state's ITS/CVO program that defines broad goals and objectives, as well as specific projects, milestones, responsibilities, and funding levels. The business plan emphasizes the application of ITS technologies to improve state CVO processes and procedures.

The objectives of ITS/CVO business plans are to: provide a framework for identifying problems in current CVO processes and opportunities for applying ITS to address these problems; achieve consensus on the ITS/CVO projects and policies among state agencies and the motor carrier industry; allow ITS/CVO projects to be developed and deployed in a coordinated manner; and serve as a concise program summary that may be distributed to state agencies, legislators, the general public, and other states.

This technical memorandum provides a guide to developing a state ITS/CVO business plan. It also reviews the status and results of state ITS/CVO business planning to date. The report is intended for a state department of transportation, or any other agency that has the overall responsibility for developing the state's ITS/CVO program. It also will assist representatives from the FHWA Office of Motor Carriers who are assigned to support state agencies in developing the ITS/CVO business plans.

17. Key Words	18. Distribution Statement
intelligent transportation systems, commercial vehicle Operations, motor carrier industry, commercial vehicle regulation, fleet management, safety inspections, business plan, nainstreaming	No restrictions. This document is available to the public through the National Technical Information Service, Springfield, VA 22161.

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	65	

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1. Introduction

A state ITS/CVO Business Plan is a "roadmap" to a state's Commercial Vehicle Operations (CVO) program that defines broad goals and objectives, as well as specific projects, milestones, responsibilities, and funding levels. The Business Plan emphasizes the application of Intelligent Transportation Systems (ITS) technologies to improve state CVO processes and procedures.

This guide reviews the status and results of state ITS/CVO business planning to date. It also provides a guide to developing a state ITS/CVO Business Plan for state and Federal officials.

This report is intended for state agencies that are responsible for developing a state's CVO program. It also will assist representatives from the Federal Highway Administration (FHWA) Office of Motor Carriers who are assigned to support state agencies in developing ITS/CVO Business Plans. In addition, it will educate the private sector, elected officials, and the general public who wishes to know more about the purpose and content of state ITS/CVO Business Plans.

This report is organized as follows:

- Section 2.0 provides a background to ITS/CVO and Business Plan development;
- Section 3.0 explains the methodology and approach of this report;
- Section 4.0 explains the process that a state should undertake to develop an ITS/CVO Business Plan;
- Section 5.0 includes an outline for and a prototype of an ITS/CVO Business Plan; and
- Section 6.0 summarizes the conclusions and recommendations of this report.
- Appendix A includes the bibliography for this report. Appendixes B and C include interview and survey guides that may be used to collect data for the Business Plan.

2. Background

This section provides a background to ITS/CVO Business Plan development. It explains ITS and CVO, various approaches to improve CVO activities, and the purpose of an ITS/CVO Business Plan.

CVO AND ITS

Commercial vehicle operations involve approximately three dozen areas of interaction between public agencies and motor carriers. They include functions such as truck registration, size and weight enforcement, vehicle maintenance and inspection, and fleet routing and dispatching. These transactions are critical for highway safety, carrier productivity, and revenue collections.

ITS apply advanced and emerging technologies in such fields as information processing, communications, control, and electronics to address surface transportation needs. **ITS/CVO are** the application of ITS technologies to CVO to streamline administrative procedures and improve the safety and productivity of trucking (see Figure 1).

The objectives of the national ITS/CVO program are to:

- Improve highway safety;
- Streamline the administration of motor carrier credentials and taxation;
- Reduce congestion costs for motor carriers; and
- Ensure regulatory compliance by and equitable treatment of motor carriers.

ITS/CVO services offer a range of benefits to the states, the Federal government, the private sector, and the general public. ITS/CVO will:

- Reduce the frequency and severity of commercial vehicle accidents;
- Reduce administrative costs for regulatory agencies and motor carriers;
- Reduce congestion and improve efficiency at weigh stations and international border crossings; and
- Improve economic competitiveness by reducing the cost of motor carrier transportation and regulation.

ITS/CVO include the following types of activities:

- Automating existing procedures and operations. Agencies and carriers are purchasing computer hardware and software, communications systems, electronic sensors, and other

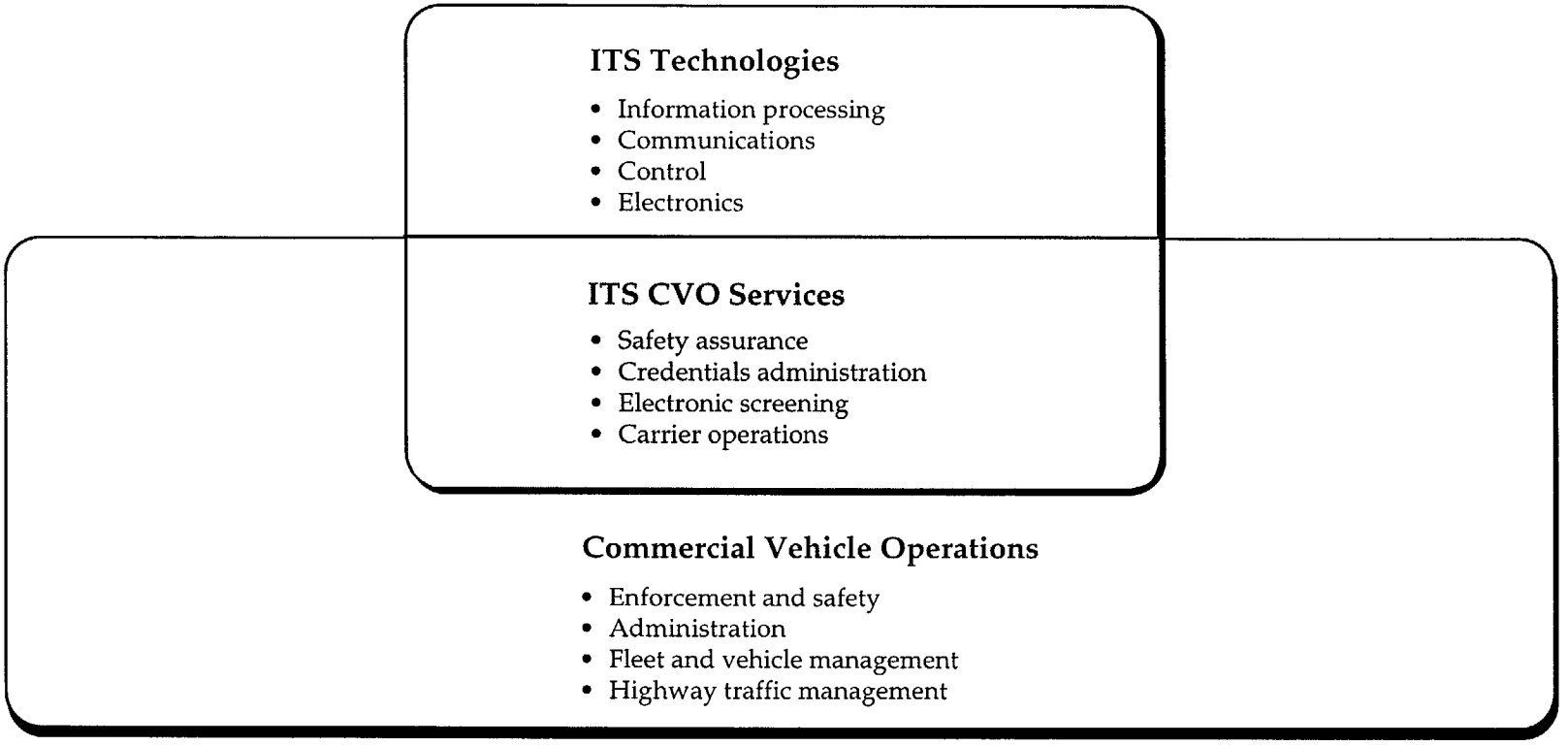


Figure 1. ITS and CVO.

instruments to automate their existing recordkeeping, inspection, and communication procedures.

- **Networking information systems.** The deployment of electronic data interchange and electronic funds transfer capabilities enables agencies and carriers to share information and transfer money. The development of linked databases and networks of information systems will enhance the systems now operated independently by agencies and carriers.

- **Changing the way that agencies and motor carriers do business.** Over time, the automation and networking of information systems will encourage changes in traditional processes and roles to reflect the changing needs of the intermodal transportation system. A commonly cited goal is "transparent borders," which refers to enabling safe and legal carriers to travel through multiple states or across international borders, with no more than a single stop. Another common goal is "one-stop shopping," which refers to enabling carriers to obtain permits for multiple states through a single source, either physically through a single office or electronically through the use of information systems and software.

The national ITS/CVO program comprises dozens of initiatives covering multiple functions. These initiatives represent the efforts of individual states, consortia of states, the Federal government, individual motor carriers, and industry associations. The ITS/CVO program is developing capabilities in four broad areas (see Figure 2):

- **Safety assurance. Programs** and services designed to assure the safety of commercial drivers, vehicles, and cargo. These include automated roadside safety inspections and carrier reviews, safety information systems, and onboard safety monitoring.

- **Credentials administration.** Programs and services designed to improve the deskside procedures and systems for managing motor carrier regulation. These include electronic application, purchasing, and issuance of credentials, as well as automated tax reporting and filing.

- **Electronic screening.** Programs and services designed to facilitate the verification of size, weight, and credential information. These include the automated screening and clearance of commercial vehicles at weigh stations and international borders.

- **Carrier operations.** Programs and services designed to reduce congestion and manage the flow **of** commercial vehicle traffic. These include travel advisory services and hazardous materials incident response services. The private sector is taking the lead in the deployment of fleet and vehicle management technologies that improve motor carrier productivity.

The Commercial Vehicle Information Systems and Networks (CVISN) initiative will provide a high-level infrastructure to link these projects and information systems, including common standards for electronic communication among participating agencies and carriers. The Mainstreaming initiative is developing an organizational infrastructure for ITS/CVO deployment, including the creation of state and regional ITS/CVO Business Plans and policy forums.

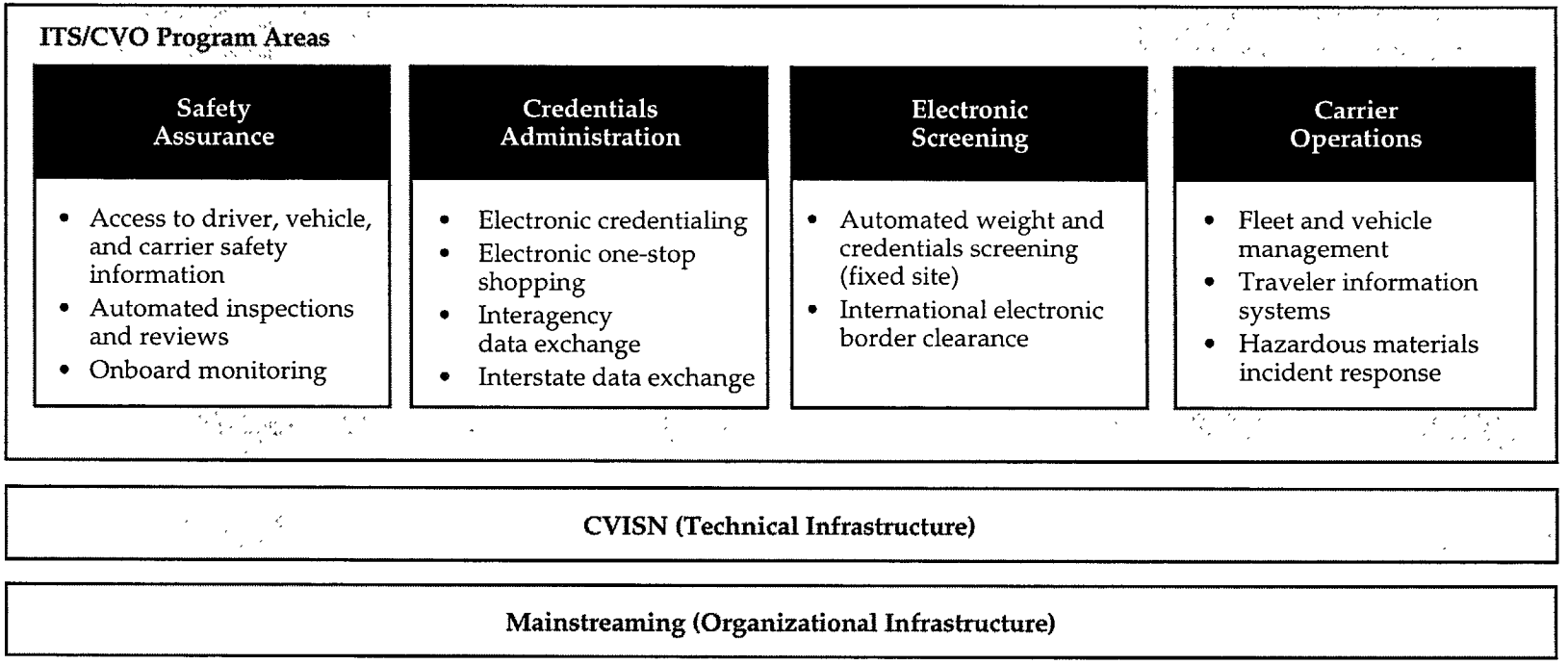


Figure 2. National ITS/CVO program areas.

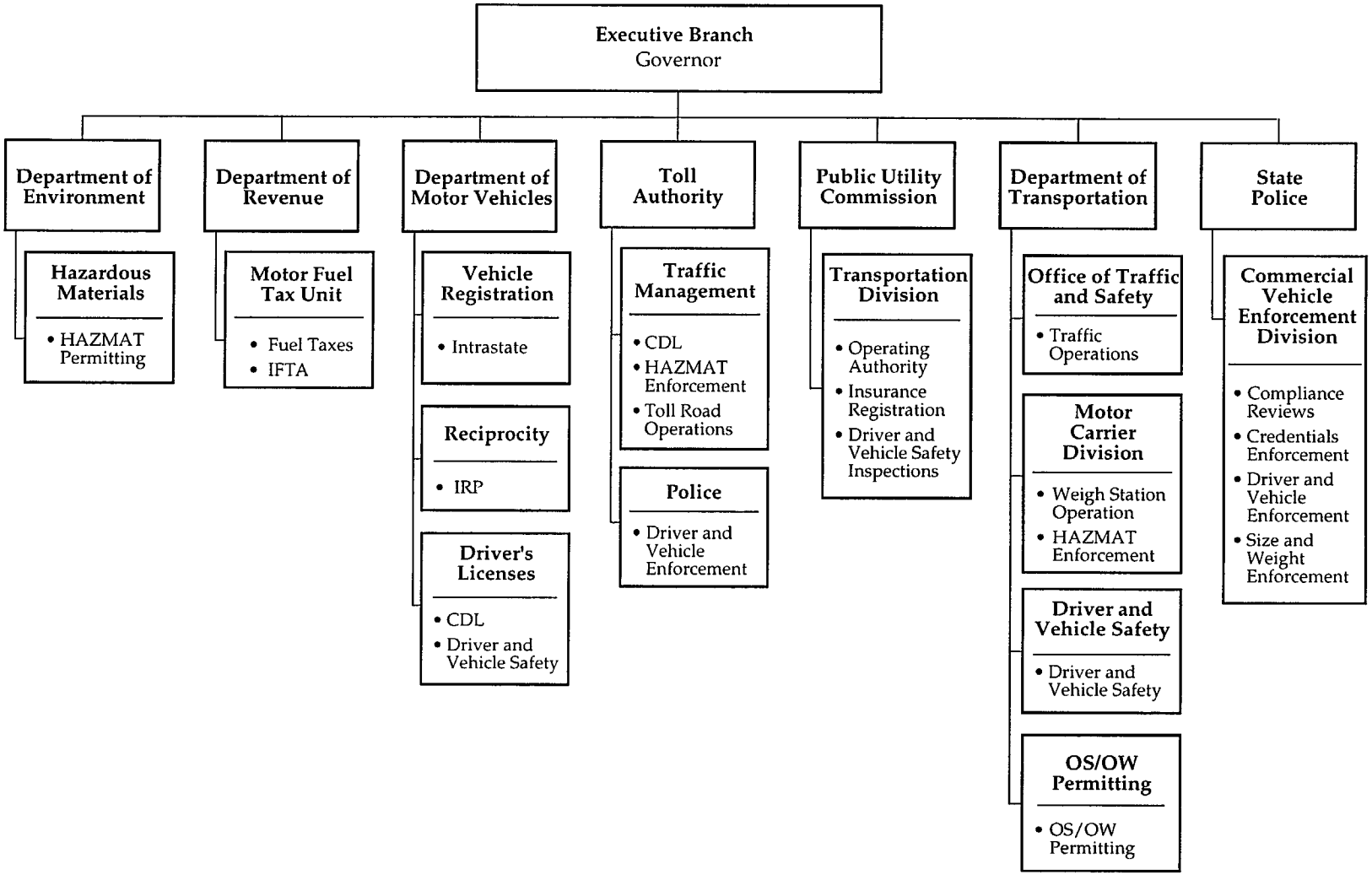


Figure 3. State organization of motor carrier regulatory responsibilities (example).

PURPOSE OF BUSINESS PLANS

The purpose of developing an ITS/CVO Business Plan is to ensure support for coordinated ITS/CVO deployment in a state. A well-developed Business Plan will:

- Provide a framework for identifying problems in current CVO procedures and oppourtunities to address those problems. The Business Plans may include both the application of ITS technologies, as well as non-technical solutions such as process reengineering.

- Achieve consensus on the implementation of changes in CVO and the improvement of communication among and between state agencies and the motor vehicle industry. The typical state allocates responsibility for motor carrier regulation among five or six agencies (see Figure 3). Many CVO regulatory programs operate in virtual isolation from one another; the lack of coordination and interaction leads to inefficiency and ineffectiveness. An effective ITS/CVO Business Plan requires participation and support from all relevant agencies. In addition, a CVO Business Plan can help improve cooperation among state agencies and the motor carrier industry.

- Allow ITS/CVO to be developed and deployed in a coordinated manner to conserve resources and to ensure that "balkanized" CVO regulatory programs are not replaced by equally uncoordinated ITS/CVO programs. There are numerous ITS/CVO projects at the local, regional, and national levels in various stages of development. Nationally, more than 50 projects are in some stage of development or deployment.

- Serve as a concise program summary that may be distributed to state agencies, legislators, the general public, and other states.

The FHWA is providing funding to the states through the ITS/CVO Mainstreaming initiative to support the development of ITS/CVO Business Plans. The FHWA views the development of an ITS/CVO Business Plan as an opportunity to formalize the CVO planning process, promote the development of public/private partnerships, and provide justification for ITS/CVO funding in state budgets.

3. Approach

This section explains the methodology used to develop this report. The research included the following work steps:

- Collection and review of business plans and relevant literature at the state, regional, and national level in CVO, ITS, and other transportation areas;
- Identification of "best practices" among state ITS/CVO programs;
- Analysis of the results of the literature review and best practices search;
- Development of a model business plan; and
- Development of findings and conclusions based on this research effort.

A complete list of the documents that were reviewed for this project is included in Appendix A. The literature includes state and regional ITS/CVO Business Plans; the National *ITS/CVO Program;* and literature on business plan development" Only three individual states – Minnesota, Missouri, and Oregon – have developed ITS/CVO Business Plans to date. Other states have developed detailed project plans for CVISN implementation (e.g., Maryland and Virginia) or credentials process reengineering (e.g., Colorado and Minnesota). At least eight multistate consortia have developed ITS/CVO Business Plans, most often as part of institutional issues studies that identified the barriers to ITS/CVO deployment (see Table 1). Table 2 lists major existing regional ITS/CVO Business Plans, identifying the year each plan was produced and the status of the document when it was reviewed for this project.

With the availability of Federal ITS/CVO Mainstreaming funds, more states will develop ITS/CVO Business Plans in the coming year.

Table 1. Selected regional ITS/CVO business plans.

Region	States
Advantage CVO Partnership	Alabama, Florida, Georgia, Indiana, Kentucky, Michigan, Mississippi, North Carolina, Ohio, South Carolina, Tennessee, and Virginia
COVE	Arizona, Arkansas, Colorado, Louisiana, New Mexico, Oklahoma, and Texas
Eastern States	Delaware, Maryland, New Jersey, New York, Pennsylvania, Virginia, West Virginia, and District of Columbia
I-95 Corridor Coalition	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and District of Columbia
Kansas-Missouri	Kansas and Missouri
Multijurisdictional Automated Preclearance System	Idaho, Oregon, Utah, and Washington
Multi-State (Southeast)	Alabama, Florida, Georgia, Kentucky, Michigan, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia
Northern New England	Maine, New Hampshire, and Vermont

Table 2. Characteristics of selected ITS/CVO business and project plans.

	Year Developed	Status
State lTS/CVO Business Plans		
Minnesota Guidestar	1995	Final report
Missouri	1996	Final report
Oregon Strategic Plan IVHS/CVO	1993	Final report
State CVLSN Project Plans		
Maryland	1996	Draft plan
Virginia	1996	Draft plan
State Re-engineering Plans		
Minnesota Guidestar	1996	Final report
WHEELS Re-engineering (Colorado)	1995	Final report
Regional ITS/CVO Business Plan		
Advantage CVO Partnership	1996	Draft
COVE CVO Implementation Plan (produced as part of institutional issues study)	1994	Final report
Eastern States Regional Business Plan (produced as part of institutional issues study)	1995	Final report
I-95 Corridor Coalition CVO Program	1996	Program endorsed by Executive Board
Kansas-Missouri ITS/CVO Implementation Plan (produced as part of institutional issues study)	1994	Final report
Multi-State Regional Business Plan (produced as part of institutional issues study)	1993	Final report
Multijurisdictional Automated Preclearance System	1997	Under development
Northern New England ITS/CVO Business Plan (produced as part of institutional issues study)	1995	Final report

4. The Process of Developing an ITS/CVO Business Plan

This section recommends a process for developing a state ITS/CVO Business Plan. It discusses the responsibilities involved in developing the Plan, and presents an overall approach, organized into three phases: project initiation, Business Plan development, and Business Plan implementation.

PROJECT INITIATION

An ITS/CVO Business Plan should be developed by a Business Plan Manager and a Steering Committee. The Business Plan Manager is responsible for organizing and driving the development of the Business Plan. The individual or individuals who led the request for Federal ITS/CVO Mainstreaming funds most likely are the ones to initiate the business planning process. Due to the complex nature of most states' motor carrier regulations, the Business Plan Manager may choose to have an outside consultant assist with the development of a comprehensive Business Plan.

Most existing ITS/CVO Business Plans have been developed under the guidance of a steering committee or working group. The primary responsibilities of the Steering Committee are to:

- Develop the Business Plan's vision, guiding principles, goals, and objectives;
- Agree upon a work plan for the Business Plan Manager;
- Designate representatives from the state CVO agencies and the motor carrier industry to participate in the development of the ITS/CVO Business Plan; and
- Review, plan, and approve each phase of the business planning process.

The Business Plan Manager should establish the Steering Committee and serve as a committee member. The Committee should include managers from the full range of state agencies with CVO responsibilities, including departments of transportation, revenue, motor vehicles, public safety, and environmental protection; public utility commissions; toll authorities; and the state police. The state motor carrier industry should be represented by the state motor truck or bus association, as well as by individual carriers where possible. The composition of steering committees for existing ITS/CVO Business Plans is included in Table 3.

FHWA Role

The FHWA should play an active role in the development and implementation of state ITS/CVO Business Plans, both through participation in Steering Committee meetings and through the review of documents. This level of participation will help ensure that the individual state Business Plans are consistent with the direction of the national ITS/CVO program.

Table 3. Composition of selected ITS/CVO Business Plan steering committees.

	DOT	DMV	DOR	State Police/ Public Safety	PUC PSC	Public Works	Toll Authority	FHWA	Motor Carriers	Truck or Bus Association	Other
State ITS/CVO Business Plans											
Minnesota	T			T				T	T	T	
Oregon	T				T					T	
State CVISN Project Plans											
Maryland CVISN	T		T	T	T			T	T	T	T[1]
Virginia CVISN	T	T		T				T	T	T	
State Re-engineering Plan											
Colorado	T		T								
Regional ITS/CVO Business Plans											
COVE	T		T					T		T	
Eastern States	T	T				T		T		T	
I-95 Corridor Coalition	T						T	T		T	
Kansas and Missouri	T		T	T				T	T	T	T[2]
Multi-State	T							T	T	T	
Northern New England	T	T	T	T		T	T	T	T	T	

T Indicates that a department or agency has at least one representative on the committee.

1 Department of the Environment
2 Department of Economic Development

The FHWA should provide technical assistance to the states in the development of ITS/CVO Business Plans. The FHWA may:

- Offer guidance from staff of the Office of Motor Carriers (OMC) division offices;
- Continue to fund the appointment of regional ITS/CVO "champions" to work with consortia of states, both individually and collectively, on ITS/CVO planning and deployment; and
- Identify "best practices" in state ITS/CVO business planning, and make reports available to the states.

BUSINESS PLAN DEVELOPMENT

The development of a Business Plan typically involves four steps: data collection, data analysis, project definition, and report preparation. The state's CVO stakeholders must participate in all phases of Business Plan development.

As a rule, the ITS/CVO Business Plan is created in an iterative fashion. Figure 4 shows the general flow of work involved in preparing the Plan. The data collection effort may consist of interviews, surveys, focus groups, and/or workshops involving representatives of the motor carrier industry and CVO agencies. Current practices within the state's CVO program should be reviewed, as well as "best practices" from other states. The Business Plan Manager, Steering Committee members, and any outside consultants will gather data, perform analysis, and prepare draft conclusions and recommendations for review by CVO stakeholders. As a result of this review, additional data collection and analysis may be required to improve and refine conclusions and recommendations. This iterative process should continue so long as meaningful improvements to the Plan occur and resources permit.

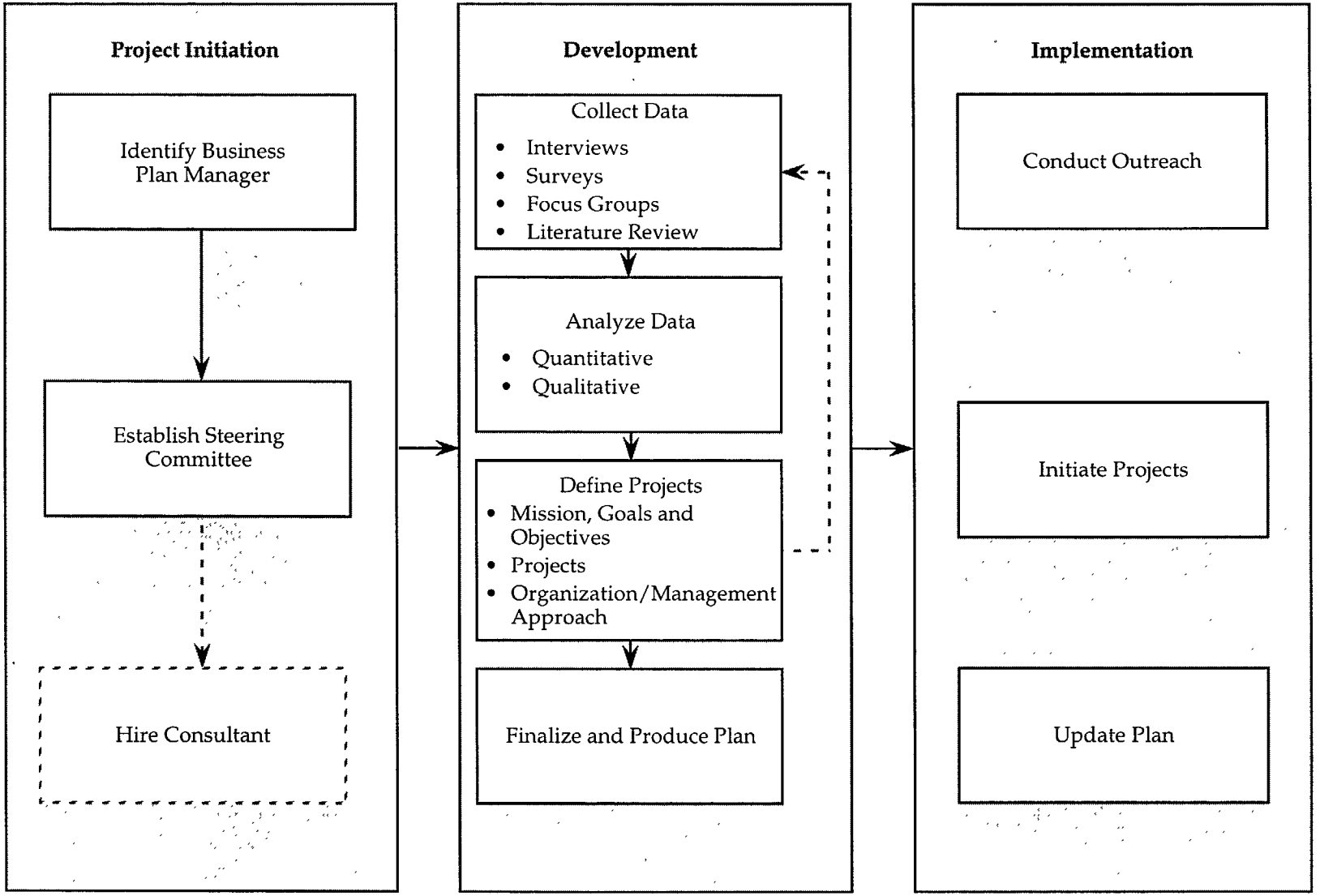
The effort required to produce a Business Plan depends on the level of investment that each state wishes to make and how quickly the various stakeholders are able to reach consensus, Each state will invest in its Business Plan according to the priority accorded to ITS/CVO. From initiation to completion, the development of an in-depth Business Plan will require 6 to 18 months.

The following tasks represent the work steps that are involved in developing a typical Business Plan. The specific activities included in each task will vary based on each state's unique political and economic environment.

Task 1. Define Strategic View

The Steering Committee should define a preliminary strategic view for the Business Plan. The strategic view includes the following elements:

- **Mission Statement:** Overall, long-range intention for the state's CVO program;
- **Guiding Principles:** Underlying assumptions that guide the development of the ITS/CVO Business Plan;



Note: Dotted lines represent optional steps.

Figure 4. ITS/CVO business plan development process.

- Goals: Broad achievements toward which the ITS/CVO program is directed; and
- Objectives: Specific components of the goals.

Examples of the four components are included in Section 5 of this report. The strategic view will be refined later in the business planning process, but the Steering Committee should reach consensus about the strategic view early in the process to provide a context for future work.

Task 2. Collect Data on CVO Issues and Opportunities

Once the Steering Committee has defined a preliminary strategic view, a core working group, including the Business Plan Manager, agency staff, and an outside consultant (as appropriate) can begin the data collection process. The core working group should identify the types of data that will be required, the purpose of the data, where the data can be collected, and how the results should be documented. The Plan should draw on three major data sources: a review of the existing state CVO program, a review of business plans from other states and regions, and input from public and private sector CVO stakeholders.

State CVO Program

A clear understanding of the current state CVO program is required to identify any bottlenecks or missing links in the regulatory processes. The review of the CVO program should explain current regulatory procedures, the levels of ITS/CVO deployment, and the responsibilities of all state agencies involved in motor carrier administration and safety enforcement. If the current state CVO program has not been documented for an ITS/CVO institutional issues study, interviews with key CVO agency personnel may be necessary to understand the overall program.

"Best Practices" from Literature Review

A literature review that includes other state and regional ITS/CVO business plans may be conducted to assess the "best practices" among CVO programs, and to ensure coordination of CVO activities at the state, regional, and national levels. The literature review should include:

- Documentation of operational tests, particularly within the individual state;
- The state or region's ITS/CVO institutional issues study;
- ITS/CVO business plans from other states, including other states in the region and plans with a high degree of innovation or success in implementation;
- The regional ITS/CVO business plan that includes the individual state, if such a plan has been developed;
- The *National ITS/CVO Program,* which is available from the FHWA; and
- Other related transportation business plans and studies.

A major goal of the literature review is to ensure that each state Business Plan is consistent with the general goals and approach of the national ITS/CVO program and the appropriate regional business plans (see Figure 5).

CVO Stakeholder Input from Surveys, Interviews, Workshops, and Focus Groups

Surveys, interviews, workshops, and focus groups can help to assess existing CVO administrative and enforcement procedures and to solicit suggestions for improvement. The individuals who participate in these forums should be actively involved in CVO and represent a wide range of CVO interests, including both public sector agencies and the motor carrier industry.

If resources are minimal, written surveys may be the best method of obtaining some level of input from CVO stakeholders who are not represented on the Steering Committee. Surveys can provide feedback from a wide range of CVO stakeholders with a relatively quick turnaround time.

Interviews conducted with one or two individuals at a time provide an opportunity to collect more unstructured and detailed information than is possible from a workshop or survey. Well-structured interviews will ensure consistency and high-quality results. Appendixes B and C suggest guidelines for conducting these interviews.

The synergistic nature of workshops and focus groups permits a more interactive treatment of a topic than if the same people addressed the topic individually. Workshops and focus groups are especially useful when participants focus on project ideas and refine the preliminary Business Plan. Workshops can be a one-time event or a series of meetings that emphasize information exchange. Focus groups provide a comprehensive review of and response to the data and analysis and are less time-consuming than conducting individual interviews.

The data gathered through the surveys, interviews, focus groups, and workshops should be documented and categorized into the following areas:

- Current problems in CVO for both motor carriers and the state;
- Opportunities to resolve these problems, particularly through the application of ITS technology;
- Technical and institutional barriers to ITS/CVO deployment; and
- Strategies to overcome these barriers.

The more extensive the data collection effort is, the more comprehensive the final Business Plan will be. The data collection methods mentioned here can be used in whatever combination and sequence that the Steering Committee deems to be appropriate. The Business Plan will benefit by having input from a broad cross-section of motor carriers and state agencies. Not only will the Business Plan be enriched by the range of feedback, but stakeholder participation will create a shared sense of ownership for the Business Plan among agencies and the motor carrier industry.

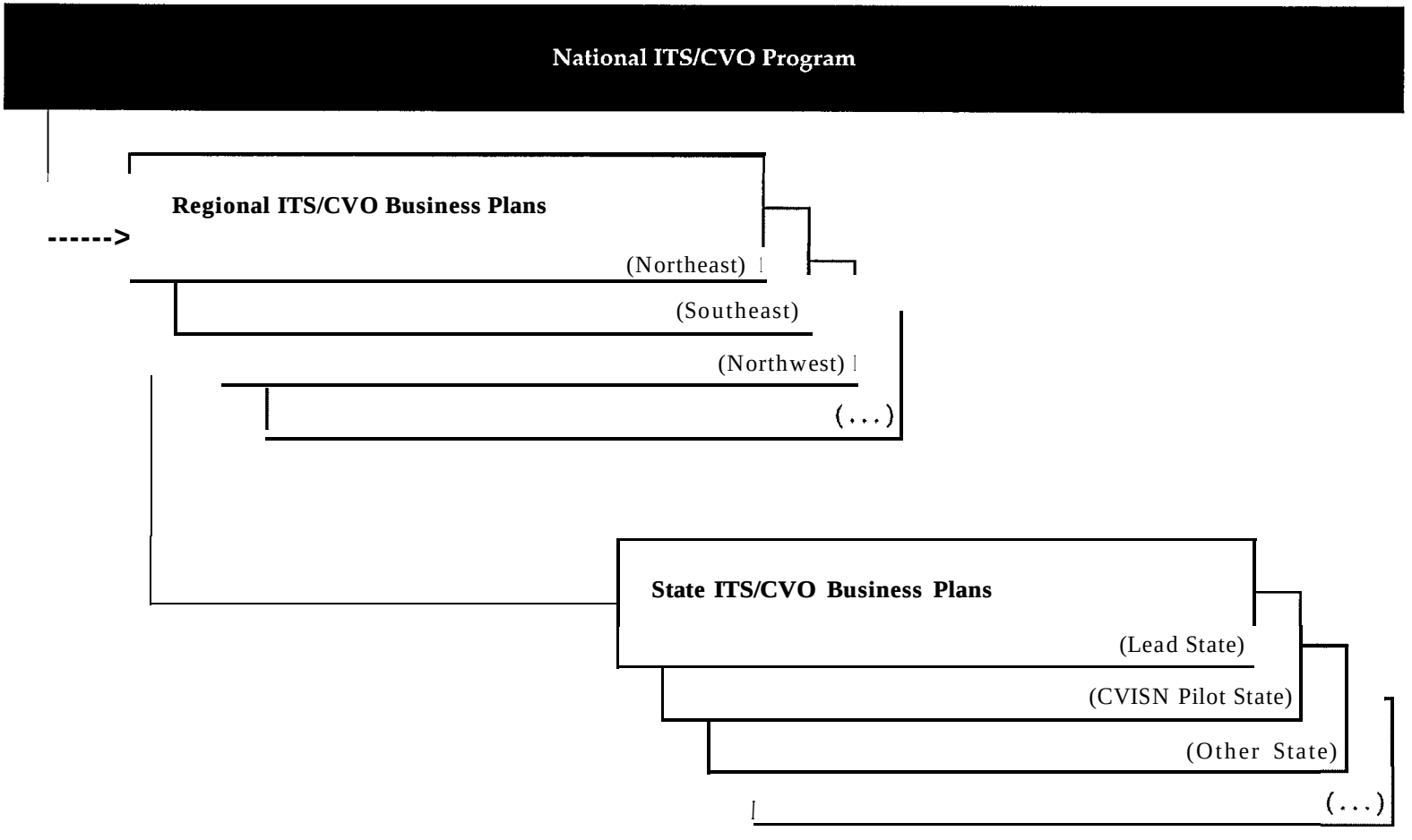


Figure 5. ITS/CVO business plans.

Case Study: Minnesota

Minnesota successfully used multiple data collection methods to develop its ITS/CVO Business Plan. The process used to develop the Business Plan is shown in Figure 6. Following an initial kickoff meeting, in-person interviews were conducted with key stakeholders. These interviews were supplemented by telephone interviews with additional public and private officials, including a limited number of representative organizations from neighboring states.

The consultant then conducted two one-day focus groups to test the interview findings about the desirable components of the ITS/CVO Business Plan, and to provide an additional forum for gathering information on the interests of the CVO community. The focus groups, consisting of middle management and operational personnel, discussed ITS/CVO applications and identified differences in interests and priorities between operators of large fleets and operators of small fleet.

Subsequently, A workshop was held to review and validate the CVO interests and priorities identified through the interviews and focus groups. The workshop brought together participants from the **interview** and focus groups as well as other relevant parties identified during these activities. The workshop produced a preliminary ITS/CVO program scope that served a **the basis** of **the Business Plan.**

After the consultant developed the draft Business Plan, which incorporated the findings of the interviews, focus groups, and initial workshop, the state's Project Manager reviewed the Plan and the recommended changes. A revised draft Business Plan was reviewed and discussed in a second one-day workshop. Using the same participants as the first workshop, the Business Plan Manager and the consultant were able to obtain input from the key stakeholders on the content of the Plan.

Based on the results of the second workshop and further consultation with the Business Plan Manager, a final Business Plan was submitted by the consultant to Minnesota. This Business Plan addresses all of the major issues and concerns expressed by the state's public and private CVO stakeholders.

Task 3. Analyze Data

The next step in the ITS/CVO business planning process is data analysis. Various techniques may be used to conduct the analysis, including the following:

- **Focus groups or workshops** involving public and private CVO representatives not serving on the Steering Committee. These individuals can review the data collected and offer feedback to the Steering Committee.

- **Process maps** of regulatory procedures. Process mapping, a systematic method of documenting and understanding current regulatory procedures, can provide a benchmark for analyzing potential improvements in CVO processes. Process maps indicate the sequence of decisions and events that occur in a specific procedure. Process maps of the current state CVO program should be developed to clarify current CVO processes, highlight the weak links in regulatory and operational procedures, and suggest opportunities for the application of ITS/CVO technologies (see Figure 7).

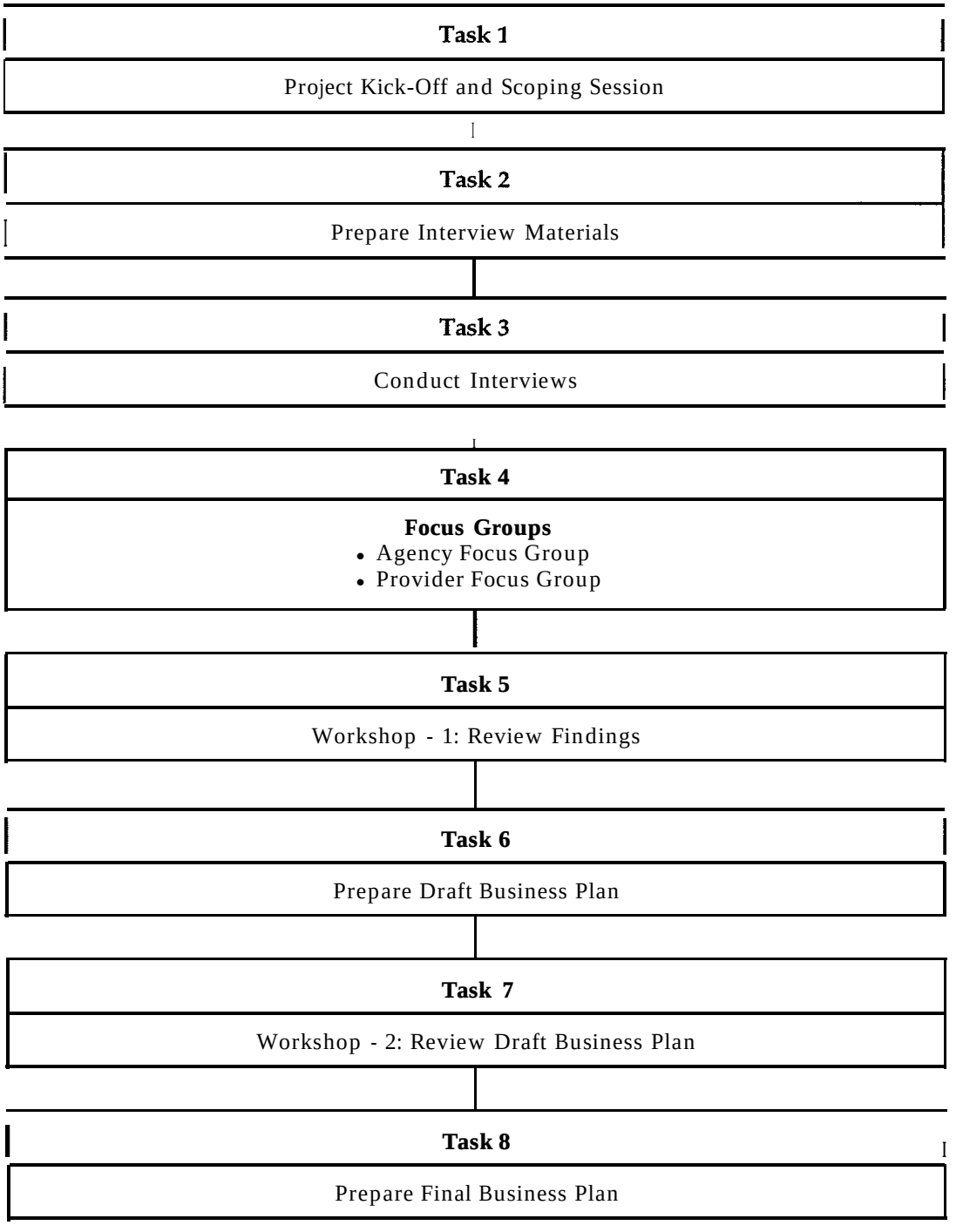


Figure 6. Process for developing the Minnesota CVO Business Plan.

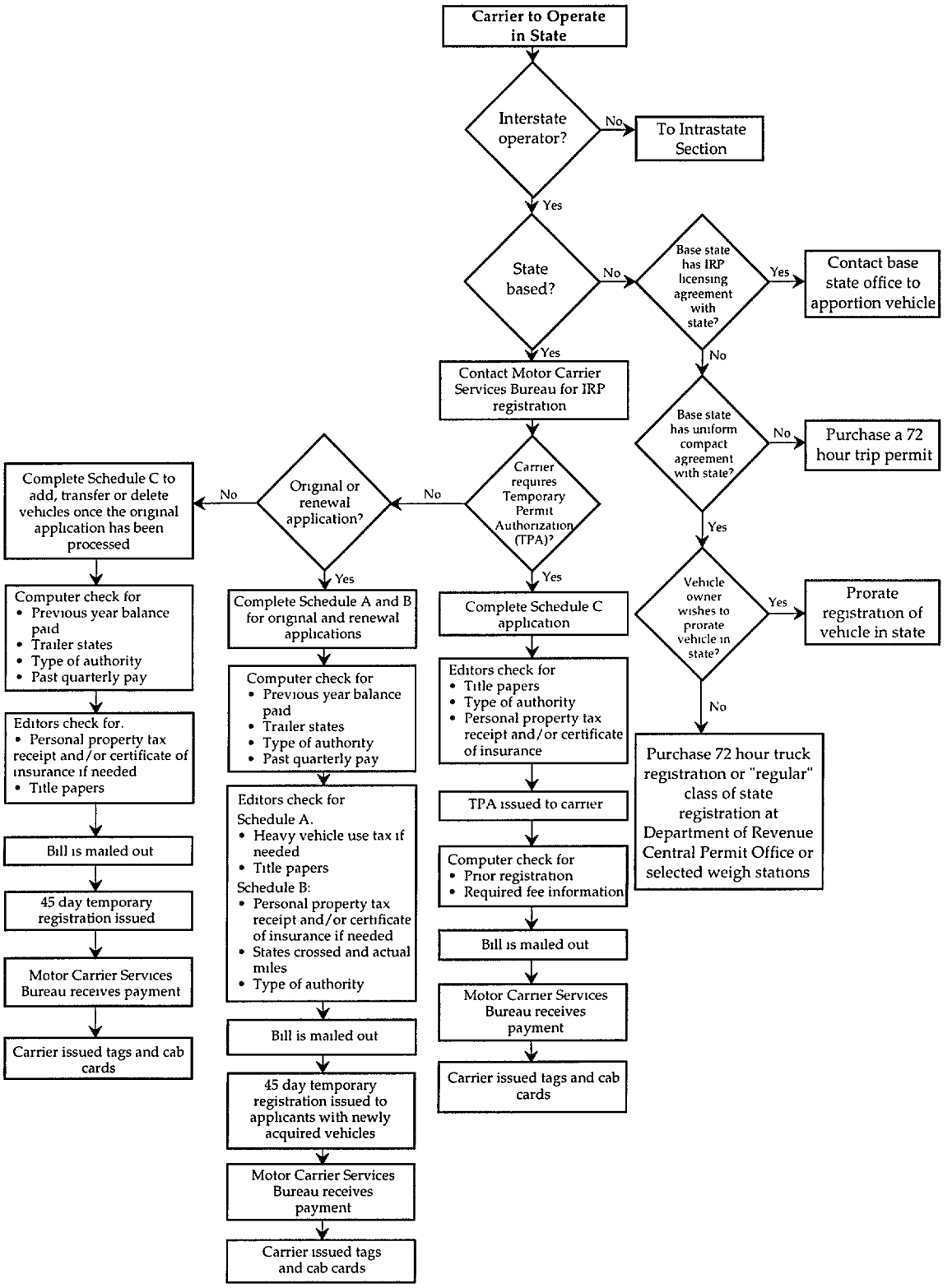


Figure 7. State process for interstate registration/IRP (sample).

- **Matrices** matching the CVO functional responsibilities to the appropriate departments and agencies. Such matrices help to identify functions for which multiple agencies claim responsibility.

- **Benefit/cost analyses.** These analyses may clarify the costs of existing CVO administrative and enforcement processes, estimate the potential benefits of lTS/CVO deployment to state agencies or to the motor carrier industry, and project deployment costs in terms of capital, operating, and maintenance expenditures. The benefits and costs may be estimated either qualitatively or, if data permit, quantitatively. The FHWA has funded research by the ATA Foundation and the National Governors' Association on the costs and benefits of ITS/CVO services for the motor carrier industry and the states, respectively.

Data analysis techniques that have been used in existing ITS/CVO Business Plans are included in Table 4.

The states may identify further methods of analysis appropriate to their business planning process. The Steering Committee should review the results of the data analysis and provide guidance for revisions, as needed. The strategic view should be revised or refined based on the data analysis.

Task 4. Define Projects

At its core, the state lTS/CVO Business Plan is a summary of current and planned projects to develop, test, and deploy specific lTS/CVO products and services. Once the data collection and analysis is complete and the program's mission, goals, and objectives have been refined, the efforts of the Business Plan Manager and Steering Committee can shift to defining the plan's component projects. The Business Plan both should document existing ITS/CVO projects in the state and identify projects for future implementation. These projects should include both national and regional initiatives in which the state will participate, as well as state-specific projects.

For each project, the Business Plan should define the following:

- Goals and objectives – Why conduct this project? How does it contribute to the overall goals and objectives of the state ITS/CVO program?

- Outcome – What is the intended results of this project? What services will it provide?

- Project location – Where will this project take place?

- Technical approach – How will the services be delivered?

- Organization and management approach – Who is responsible for delivering these services and managing this project?

- Schedule and milestones – When will this project be completed?

- Funding approach – How much funding is required? Who is responsible for funding this project?

Table 4. Techniques used in ITS/CVO Business Plan Development

	Surveys	Interviews	Workshops/ Focus Groups	Liturature Review	Process Maps	Benefit/ cost Matrixes	Analysis
State ITS/CVO Business Plan							
Minnesota		T	T				
Oregon			T	T Limited			T
State Re-engineering Plan							
Colorado			T	T Limited	T Limited		T
Regional ITS / CVO Business Plan							
COVE	T	T	T	T		T	T
Eastern States	T		T				
I-95 Corridor Coalition	T	T	T	T			
Kansas-Missouri		T	T	T	T		
Multi-State			T	T	T		
Northern New England		T	T	T	T	T	T

2 Government Processes and business practices for truck administrative regulation and enforcement were collected and documented but in the form of a process map.

The Business Plan should provide a framework to define the relationships among projects. This framework should be used to explain relationships among projects that would affect project development; identify coordination required between individual projects due to technical or resource constraints; and assign a priority to each project that will guide resource allocation decisions. It is recommended that the states use a program framework similar to that of the national ITS/CVO program, which categorizes projects into four major areas, as discussed in Section 2:

- Safety assurance;
- Credentials administration;
- Electronic screening; and
- Carrier operations.

Most ITS/CVO projects can be categorized into one of these four areas (see Figure 8). In addition, the national ITS/CVO program includes two major cross-cutting projects: the CVISN initiative, which is developing a technical infrastructure for ITS/CVO projects; and the Mainstreaming initiative, which is developing an organizational infrastructure to manage ITS/CVO deployment. Most state ITS/CVO Business Plans will include similar cross-cutting initiatives. On the technical side, these could include participation in the CVISN model deployment, or preparation for future adoption of the CVISN architecture. On the organizational side, these could include projects in the areas of outreach, training, or communication.

Figure 9 illustrates the component projects of an ITS/CVO Business Plan for a specific state. As shown, this sample Business Plan lays out specific projects in the areas of safety assurance, credentials administration, electronic screening, and carrier operations. In addition, this Business Plan includes a project to begin preliminary planning for future deployment of the CVISN infrastructure and a project to continue the state mainstreaming initiative.

Task 5. Prepare Business Plan Report

Once the Business Plan is in final form, the Business Plan Manager and/or the consultant must document the Plan in a report. Although the research during the development of the Business Plan may be extensive, the final written document should be brief and concise. Section 5 presents a suggested model for the outline and content of this report. A written summary of the interviews, surveys, focus group discussions, and workshop findings may be included. Additional detailed information and analysis may be included in appendices.

BUSINESS PLAN IMPLEMENTATION

While the Business Plan is being written, marketing and outreach to the CVO community should begin. The purpose of marketing is to educate the CVO community about the mission and goals of the Business Plan, and secure support for the overall Plan and the individual projects. A shared sense of ownership for the Business Plan by all CVO stakeholders is critical to the Plan's success. Outreach should be extended to both state agencies and the motor carrier industry. Local motor truck associations should be involved in the outreach to the motor carrier industry.

	ITS/CVO Program					
	Goals and Objectives (Why?)	Projects (What? Where?)	Technical Approach (How?)	Organization and Management (Who?)	Schedule and Milestones (When?)	Funding (How Much? By Whom?)
Safety Assurance						
Credentials Admin.						
Electronic Screening						
Carrier Operations						

Figure 8. Framework for ITS/CVO program summary.

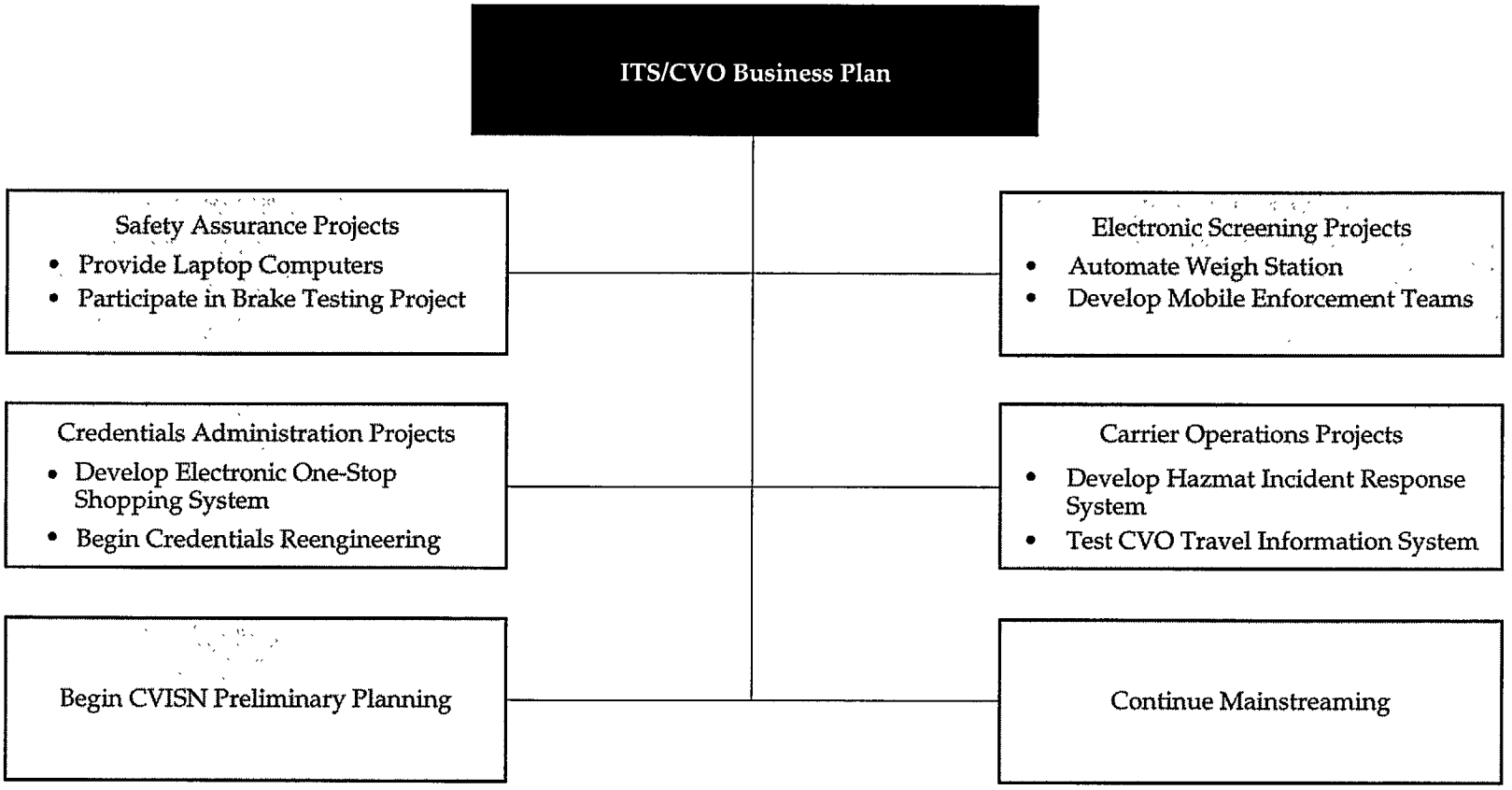


Figure 9. Business plan example – typical state.

Once the ITS/CVO Business Plan is approved, the implementation of the individual projects outlined in the Plan may begin. The Manager or Steering Committee must decide if the projects will be developed in-house or contracted to an outside consultant. If a project is to be developed internally, then the Steering Committee should assign the project to a specific agency and development should begin as scheduled in the Plan. If the project is to be contracted, the state must write and issue Requests for Partners or Requests for Proposals (RFPs) to solicit project ideas. The selection of a partner or contractor to design and implement the projects should occur in a timely manner.

Additionally, a process should be established to ensure that the Business Plan will be updated regularly. The FHWA recommends updating state ITS/CVO Business Plans at least once every three years because ITS/CVO services are still in the early stages of development. This timeframe will vary from state to state depending on a variety of factors, including the state fiscal calendar and the update of the state transportation improvement plan.

5. Content of a Model ITS/CVO Business Plan

This section offers a model for states to follow when developing an ITS/CVO Business Plan. The model is provided as a guide that should be adapted to the specific requirements of each state. An outline of the model Business Plan is included in Figure 10. A prototype ITS/CVO Business Plan also is provided to help Business Plan developers understand the level of detail that is appropriate. In this prototype plan:

- The shaded box at the left annotates each section; and
- The text to the right is an example of how the section might begin, or is written in full in the case of a few simple topics.

Model ITS/CVO Business Plan Report

Executive Summary

1.0 Introduction

2.0 Overview of the Business Planning Process

3.0 Description of the State
- 3.1 Current State CVO Program
- 3.2 Economic and Political Characteristics
- 3.3 Issues and Opportunities

4.0 Strategic Overview
- 4.1 Mission Statement
- 4.2 Guiding Principles
- 4.3 Goals and Objectives

5.0 Program Summary
- 5.1 Business Plan Structure
- 5.2 Description of Projects
- 5.3 Ranking of Projects

6.0 Organization and Management Approach
- 6.1 Lead Agencies
- 6.2 Scheduling and Milestones
- 6.3 Costs, Funding, and Return on Investments

7.0 Contact Names

Appendixes *(as needed)*

Figure 10. Outline of the written report of the ITS/CVO business plan.

The introduction identifies the purpose of the Business Plan, the contributors to the Plan, and the agencies who financially supported the Plan.

1.0 INTRODUCTION

The purpose of the State ITS/CVO Business Plan is to develop coordinated, efficient, safe commercial vehicle operations throughout the state, and initiate steps towards regional coordination and cooperation in CVO activities and ITS/CVO project deployment.

This Business Plan was organized and developed by the Department of Transportation with support from the Department of Revenue, Department of Motor Vehicles, the State Police, and the motor carrier industry.

The development of this Business Plan was supported by a grant from the FHWA ITS/CVO Mainstreaming funds and a state match provided by the state agencies.

The overview of the business planning process outlines the work steps that were involved in developing the Business Plan.

2.0 OVERVIEW OF THE BUSINESS PLANNING PROCESS

The business plan was developed in four phases, as follows:

- In Phase I, a Steering Committee was established to develop a strategic view for the ITS/CVO Business Plan.
- In Phase II, input from a broad range of state motor carrier agencies and the motor carrier industry was solicited through individual interviews and group workshops to identify problems in current CVO processes and potential solutions.
- In Phase III, specific projects were designed based on the recommendations of the Steering Committee in Phase I and the findings from the data analysis in Phase II. In addition, the roles and responsibilities for implementation of the Business Plan were identified and assigned.
- In Phase IV, a written report was prepared summarizing the Business Plan.

3.0 DESCRIPTION OF THE STATE

This section describes the issues and characteristics of the state that impact motor carrier activity, including current motor carrier regulatory processes and procedures, economic and political characteristics of the state that affect CVO, and opportunities for change in CVO.

The state ITS/CVO Business Plan explains the current procedures and practices used to administer and enforce motor carrier regulations.

3.1 Current State CVO Program

Currently, the State requires each motor carrier to register for up to 10 different credentials, including commercial drivers license, registration, and fuel tax. In the case of a non-standard load, the carrier must apply for a permit appropriate to the characteristics. These permits include: oversize/overweight permit, hazmat permit, . . .

The ITS/CVO projects that currently are being implemented in the State include:

The Business Plan should document existing TTS/CVO projects and deployment levels in the state.

- Participation in an operational test of regional electronic one-stop shopping;
- Deployment of laptop computers at 10 percent of fixed weigh stations;
- Upgrading 25 percent of current weigh-in-motion systems to high-speed weigh-in-motion;
-

This section describes the economic and political characteristics of the state that affect CVO, including the CVO regulatory structure.

3.2 Economic and Political Characteristics

There are X thousand motor carriers based in the State, accounting for a total of X thousand vehicles. These motor carriers account for the equivalent of X thousand full-time jobs. X hundred buses in the State account for X thousand passenger trips per year.

Currently five agencies are involved in motor carrier credentialing and two agencies are responsible for safety enforcement. These agencies are as folows: . . .

The motor carrier industry accounts for $X million in state revenues annually...

This section identifies the issues that affect CVO in the state and the opportunities that exist to apply ITS technologies.

3.3 Issues and Opportunities

Major issues affecting the administration and enforcement of CVO regulations in the State include the following:

- The Department of Transportation recently completed an extensive reorganization...

- The Department of Revenue recently automated its fuel tax accounting system in preparation for its imminent membership in International Fuel Tax Agreement...

-

4.0 STRATEGIC OVERVIEW

This section explains the vision and direction of the Business Plan. It includes the State's mission statement, guiding principles, goals, and objectives for its CVO program.

The mission statement is the overall, long-range intention for the state's CVO program.

4.1 Mission Statement

The mission of the State's CVO program is as follows:

- Provide high-quality, efficient, safe, and legal commercial vehicle shipping and busing services throughout the state.

Guiding principles are the underlying principles that guide the development of the ITS/CVO Business Plan.

4.2 Guiding Principles

The projects included in this Business Plan were developed to reflect the following principles:

- Projects should reduce the costs associated with the administrative processes of state agencies and motor carriers.
- Projects should lead to quantifiable improvements in public safety and revenue collection.
- ...

Goals are the broad achievements toward which the ITS/CVO program is directed. Objectives are specific components that embody these goals.

4.3 Goals and Objectives

The goals and objectives of the State's ITS/CVO program are as follows:

Goal: Enhance highway safety.

- **Objective:** Reduce the number and severity of highway accidents involving commercial vehicles.
- **Objective:** Improve motor carrier compliance with safety regulations.

Goal: Promote efficient state administration of commercial vehicle regulatory and enforcement functions.

- **Objective:** Implement one-stop shopping for registration, fuel taxation, and insurance registration.
- **Objective:** Automate credentials acquisition and transfer procedures.

Goal: Improve motor carrier productivity.

- **Objective:** Reduce the impact of traffic congestion **on** motor carrier operations.

- **Objective:** Eliminate unnecessary delays for weight and safety checks.

Goal: Support state, regional, and national economic growth and global competitiveness.

- **Objective:** Eliminate unproductive requirements, regulations **and processes.**

- ...

5.0 PROGRAM SUMMARY

The program summary includes an explanation of the Business Plan's classification of projects, a description of the projects, and a ranking of projects in order of priority.

This section **explains** how the projects in the Business Plan will be categorized, and connect each project to the specific objectives it is intended to fulfill.

5.1 Business Plan Structure

The ITS/CVO projects included in this Business Plan are categorized in four program areas: safety assurance, credentials administration, electronic screening, and carrier operations. They address the following problems:

Problems by Program Category	**Projects**
Safety Assurance	
• Lack of access to real-time data on motor carrier status	Project **#l** (Objectives a & b) Project #2 (Objective c)
Credentials Administration	
• Complex and redundant administrative system	**Project #3** (Objectives d & e) **Project #4** (Objective f)
Electronic Screening	
• Inefficient clearance of commercial vehicles at weigh stations and international borders	**Project #5** (Objectives g & h)
Carrier Operations	
• Lack of access to real-time data on congestion and weather	**Project #6** (Objectives i & j)

The project description gives an account of each of the ITS/CVO projects in the Business Plan, including its objective, intended result, participating agencies, and technical approach. The projects include both ITS and non-ITS projects.

5.2 Project Description

Project No. 3: Administrative Process Reengineering

Objective: Reengineer the CVO regulatory processes in the State to make them more cost-effective, productive, user-friendly, and efficient in meeting the state's objectives in maintaining a CVO regulatory system and in minimizing the administrative burden on the motor carrier industry.

Outcome: More efficient and cost-effective agency administrative processes resulting in improved agency and carrier productivity.

Lead Agency: State Department of Transportation (DOT)

Other Participating Agencies: All CVO regulatory offices

Market: Motor carrier industry and regulatory agencies

Approach:

- Conduct a management audit to document and quantify (where possible) the major inefficiencies and redundancies in the CVO regulatory administration process which result in lost productivity, foregone revenues, industry frustrations, and compromises to safety.
- Develop recommendations for reengineering the administrative processes (registration, fuel tax, OS/OW permits, operating authority, and commercial drivers' licences) to improve their efficiency.
- Quantify the costs and benefits of the reengineered systems to the extent possible.
- Develop process maps to document and understand regulatory procedures. The maps will facilitate the measurement of staff, time, and cost associated with each process, identify changes that will be required to improve the processes, and quantify the benefits of those changes.

Key Issues:

. A certain amount of agency staff resistance, defensiveness and nervousness should be anticipated.

- Process reengineering may require statutory changes.

- Quantifying the benefits of changes, particularly expected outcomes such as improved safety, can be difficult and expensive due to data limitations, sampling size requirements, and the relatively small number of incidents over short time periods.

Products: Management audit of existing conditions and recommendations for process engineering.

Schedule: 12 months – interim product within six months.

Cost: $800,000 estimated to conduct the management audit, develop the reengineering strategy, and quantify the benefits.

Estimated Project Management Requirement: One-half full-time equivalent.

Project No. 4: ...

This section explains how **the projects are** ranked, as well as the actual project ranking in order of priority.

5.3 Ranking of Projects

Based on the national ITS/CVO program and the prevailing sentiment among the members of the Steering Committee, it was decided that the State's highest priority is safety. Therefore the safety assurance projects that focus enforcement efforts on the identification of high-risk carriers are most important...

Projects Ranked by Priority
1. Project #1 Safety Assurance
2. Project #2 Safety Assurance
3. Project #5 Electronic Screening
4. Project #4 Credentials Administration
5. Project #6 Carrier Operations
6. Project #3 Credentials Administration

6.0 ORGANIZATION AND MANAGEMENT APPROACH

The organization and management approach covers:

1) The roles and responsibilities of public and private sector CVO stakeholders;

2) Scheduling, duration, and sequencing of projects; and

3) Anticipated funding levels and sources.

This section identifies the lead agencies involved in project implementation.

6.1 Lead Agencies

The Steering Committee will coordinate the scheduling of all projects through the lead agency assigned to each project. The lead agency is responsible for project management, financial reporting, coordination with other agencies, and management of outside contractors. Lead agencies are listed below.

Lead Agencies
Project #1 State Police
Project #2 State Police
Project #3 Department of Revenue
Project #4 Department of Transportation
Project #5 Department of Transportation
Project #6 Department of Transportation

This section identifies the schedule for implementation of the projects in the Business Plan, including key milestones, project duration, and sequencing.

6.2 Schedule and Milestones

Schedule and Milestones

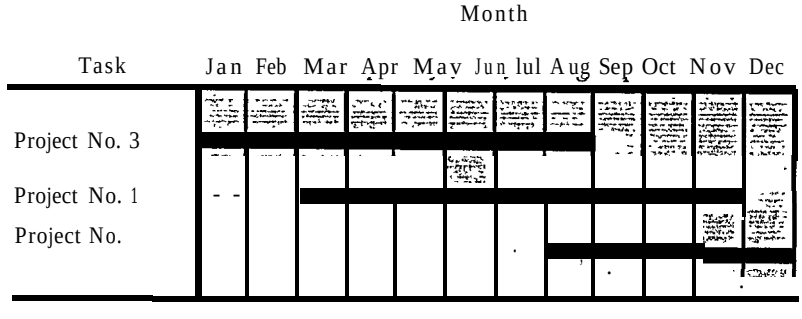
Project #1

- Milestone A Complete research and data collection (Scheduled completion date: 1/1/00)
- Milestone B Complete data analysis, findings, recommendations of alternatives (Scheduled completion date: 2/2/00)
- Milestone C Evaluate alternatives and propose work plan (Scheduled completion date: 3/3/00)
- Milestone D Complete implementation of project's action plan (Scheduled completion date: 8/8/00

Project #2

- ...

Project Duration and Sequencing



This section cites the overall cost of designing and implementing the projects, the available sources and levels of funding, and the probable **return on the** investment.

6.3 Costs, Funding, and Return on Investment

Project	cost
Project #1	**$200,000**
Project #2	**$100,000**
Project #3	**$400,000**
Project #4	**$500,000**
Project #5	**$300,000**
Project #6	**$500,000**
Total	$2,000,000

Funding is available through both public and private sources. Public funding sources include:

- The State Department of Transportation, Division of ITS/CVO;
- The State Department of Motor Vehicles, Division of Motor Carriers;
- The State Police, Motor Carrier Division;
- The State Department of Revenue; and
- The Federal Highway Administration, including the ITS field operational test program, the Motor Carrier Safety Assistance Program, . . .

Private sector funding includes funds provided by the State Motor Truck Association,...

Sources of Funding	Level
DOT Division of ITS/CVO	$X
DMV Division of Motor Carriers	$X
State Police Motor Carrier Division	$X
Department of Revenue	$X
FHWA	$X
State Motor Truck Association	$X
...	

The Business Plan should include contact names to allow for follow-up, requests for additional information, and feedback. The Business Plan Manager, Steering Committee members, and the consultant should be listed with their addresses and telephone numbers.

7.0 CONTACT NAMES

Business Plan Manager

Eileen U. All, Manager, Motor Carrier Division
Department of Transportation
100 Main Street, Capitol City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555
E-mail:Eileed@state.gov

Steering Committee

Lesley Ismore, Manager, Motor Fuel Tax Division
Department of Revenue
200 Main Street, Capitol City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555

Sgt. Raymond Dahr
Motor Carrier Division, State Police
300 Main Street, Capitol City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555

Dustin Rhodes, Manager, Hazardous Materials Division
Department of the Environment
400 Main Street, Capitol City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555

Charles Wagon, Executive Director
State Motor Truck Association
500 Main Street, Capital City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555

Roland Home, President
Family Trucking Company
600 Main Street, Capitol City, State 00000
Phone: (555) 555-5555 Fax: (555) 555-5555

Consultant

William Bucks, Vice President
Consultants, Inc.
300 State Street, Othertown, State 11111
Phone: (555) 555-5555 Fax: (555) 555-5555
E-mail: US@4Higher.com

Appendixes should be included only as necessary. Supporting information from the data collection phase or financial details may be included if significant. Reference to the appendix should be mentioned in the text of the Business Plan.

APPENDIX A
BIBLIOGRAPHY

APPENDIX B
INTERVIEW RESULTS

APPENDIX C
WORKSHOP RESULTS

6. Conclusions and Recommendations

A comprehensive and well developed ITS/CVO Business Plan provides a framework to:

- Identify problems in current CVO procedures and opportunities to apply ITS to address those problems;
- Achieve consensus to improve state CVO processes and improve communication among and between the state motor carrier agencies and motor carriers;
- Facilitate the development and deployment of ITS/CVO in a coordinated and cost-effective manner; and
- Create a concise summary of the state's plan for commercial vehicle operations.

The states and the motor carrier industry can contribute to the effective lTS/CVO business planning in the following manner.

STATE INITIATIVES

1. Each state should develop, and update on a regular basis, an ITS/CVO Business Plan with a strong policy commitment from state officials. The Plan should define the ITS/CVO services to be deployed in each state. It should detail the projects, objectives, roles, responsibilities, milestones, and funding, and estimate the costs and benefits of these activities for the state, motor carriers, and the public. Until states make these Business Plans a regular part of their doing business, the only constituency to continue ITS/CVO deployment will be individual agencies.

2. Each state should demonstrate its commitment to the Plan's success by allocating the appropriate financial and human resources to produce a comprehensive, meaningful plan. This commitment must include designating a Business Plan Manager to direct the plan's development; establishing a Steering Committee with broad representation of CVO agencies; and retaining outside contractors as necessary.

3. Each state should seek input from a broad range of agencies, both through formal representation on the steering committee and through participation in interviews, surveys, and focus groups. This participation should include not only state departments of transportation, but also state police, departments of revenue, public utility and commerce commissions, and toll authorities. Unless all of these agencies begin to communicate and work together, it will be impossible to develop and implement an effective Business Plan.

4. Each state should reach out to all relevant agencies and to the private sector to increase participation in, as well as to heighten awareness about, its ITS/CVO program. Communication, training, and education should be an important part of the business plan development process, as well as a core element of specific projects in the Business Plan.

MOTOR CARRIER INDUSTRY INITIATIVES

1. The motor carrier industry must participate fully in the development and implementation of ITS/CVO Business Plans. Many state agencies do not understand fully the needs and desires of the industry. Motor carrier participation should include industry associations such as the American Trucking Associations (ATA) or National Private Truck Council (NPTC), as well as representatives of individual carriers. Without sufficient private sector involvement, these Business Plans will fail.

Appendix A
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NATIONAL

National ITS/CVO Program Plan (draft), prepared by Cambridge Systematics, Inc. for Federal Highway Administration, August 16,1996.

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BUSINESS PLAN DEVELOPMENT

DeveIoping a Strategic Business Plan, U.S. Small Business Administration, Office of Business Development, (undated).

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Appendix B
Suggested Interview Format for Motor Carriers

INTRODUCTION

The interviewer will:

- Explain the purpose of developing a CVO Business Plan for the state;
- Explain the approach to developing the Business Plan; and
- Explain the purpose or goals of the interview.
  - Understand something about the carrier's operations and involvement with ITS; and
  - Gather information and opinions on the problems with the current system and how ITS might be used to improve CVO in the state.

QUESTIONS

Brief Overview of Company

- How many trucks does your company operate?
- Do you operate locally, regionally, or nationally?
- In what other states do you operate?
- How time sensitive are your shipments?
- Do your routes vary often?
- Are you a for-hire carrier or private?
- What type(s) of products are you hauling?
- Does your company only operate in-state or does it operate out-of-state also?
- How does your company's operation compare in size with other carriers based in the state?

General

- What frustrations do the members of your firm express about their interaction with agency personnel and the credential/reporting process?

- How much staff time is required to stay in compliance with state and federal requirements?

- Does your company experience delays at the roadside for safety or weight inspections? What causes the delay?

  - What is the average length of delay?
  - How frequently are you issued a citation?

- If yes, is there a substantial cost that your company incurs for this delay?

  - In terms of time?
  - In terms of money for citations?
  - In terms of lost business due to delayed deliveries?

- What is your impression of commercial vehicle enforcement in the state? How does it compare to other states in which you operate? (Be specific as to which state.)

- What is the biggest CVO problem in the state? How would you recommend that this problem be addressed?

- What would you like to see changed about the regulatory system in the state with respect to deskside transactions (i.e., fuel tax, permits, CDL)?

- What would you like to see changed about the regulatory system in the state with respect to roadside enforcement (i.e., inspections)?

- How familiar are you with ITS technologies for commercial vehicle operations?

- Has your company been involved with any of the ITS initiatives in the state? If yes, please elaborate about the project(s) and its degree of success.

- Who is responsible for obtaining credentials for vehicles within the company? Is there staff at your company dedicated solely to obtaining credentials?

- How are credentials obtained from state agencies? Is the process automated in any way?

- Do you know which agencies are responsible for which CVO functions?

- What is the best way for you to learn the responsibilities of each *agency?*

  - Pamphlet
  - Diagrams
  - Presentation
  - Other _____

- Based on your understanding of ITS technologies, what programs or initiatives should the state pursue to improve conditions?
- What are some non-technical barriers to implementing ITS technology?
- Are there any issues you wish to comment on concerning CVO in other states or Canada ?
- Do you have additional concerns, issues, or suggestions?

Appendix C
Suggested Interview Format For Agencies

INTRODUCTION

The interviewer will:

- Explain the purpose of developing a CVO Business Plan for the state;
- Explain the approach to developing the Business Plan; and
- Explain the purpose or goals of the interview.
  - Understand the role of the individual or the role of the agency in the regulatory and enforcement process;
  - Understand the individual 's level of knowledge of ITS in general and in the state in particular; and
  - Find out how the individual thinks ITS could be used to improve CVO in the state.

QUESTIONS

Brief Overview of Responsibilities

- What are your responsibilities with respect to commercial vehicle operations?
- Please give an overview of the responsibilities of your agency with respect to motor carrier regulation.

General

- What type of computerized systems (i.e., databases) does your agency use to support the administration of the regulatory requirements?
- Do you anticipate any upgrades or changes to your computer system or administrative procedures in the near future?
- What is your impression of how the current system works? Do the regulatory requirements accomplish what they were designed to accomplish?
- Is the system user friendly for the customer (i.e., the motor carrier?)
- What aspects of the regulatory system, do you sense, are most frustrating to motor carriers?

- Is the system user friendly for your agency?
- What communication exists between your agency and other agencies with regulatory oversight responsibilities?
  - Are there forums to discuss CVO-related topics?
  - Are annual meetings or similar meetings held?
- What are the strengths and weaknesses of the existing system?
- What is the most difficult part of your job?
- What is the best part of your job?
- How familiar are you with ITS technologies for commercial vehicle operations?
- Have you been involved with any of the ITS/CVO initiatives in your state? If yes, please elaborate about the project(s) and its degree of success.
- For each of the regulatory functions that your agency oversees, please explain how the application and renewal process work for motor carrier credentials. What aspects have been automated?

  Which information is most difficult for you to get from motor carriers?
- What information does your agency check prior to issuing credentials to motor carriers? How is this information accessed if it is maintained by another agency? Is it difficult to obtain from other agencies?
- How are credentials issued to motor carriers? Is this process automated?
- Who is responsible for enforcing the credentials that your agency issues? How is that information verified from fixed or mobile enforcement facilities?
- Does your agency conduct motor carrier audits? If yes, how is this accomplished?
- Do you understand the functions of the agencies for CVO? If not, why not?
- What is the best way for you to learn the functions of the agencies for CVO?
  - Pamphlet
  - Diagrams
  - Presentation
  - Other _____
- Based on your knowledge of the available technology, which technologies have the potential to improve or streamline administrative functions?

- Which technologies do you think have the potential to reduce delays and improve safety at the roadside?
- What do you think are some non-technical barriers to adopting ITS/CVO technology?
- What ideas do you have to make the regulatory system operate more smoothly?
- What other programs or issues would you like to see included in a CVO Business Plan in your state?
- Are there any issues you wish to comment on concerning CVO in other states or Canada ?
- Do you have additional concerns, issues, or suggestions?